β blockers and calcium antagonists equally effective for hypertension

Scott Gottlieb *New York*

Hypertensive patients with coronary artery disease had similar outcomes regardless of whether they took a β blocker or a calcium antagonist for primary control of their blood pressure.

Dr Carl Pepine of the University of Florida College of Medicine, Gainesville, and colleagues randomised 22 576 patients with hypertension and coronary artery disease 50 years and older to receive either sustained release verapamil or atenolol as first line treatment for their high blood pressure. The study enrolled patients from 862 sites in 14 countries from 1997 to 2003 (*JAMA* 2003;290:2805-16).

The study, called the international verapamil-trandolapril study (INVEST), was intended to compare multidrug strategies rather than individual agents, as most hypertensive patients need more than one drug to control blood pressure adequately.

Patients enrolled in the study could receive additional treatment with either hydrochlorothiazide or trandolapril if the single, first line agent was

unable to control their blood pressure adequately. Trandolapril was also recommended for patients with heart failure, diabetes, or renal impairment. Patients in the group being given a calcium antagonist were not allowed β blockers, however, and those in the β blocker group were not allowed calcium antagonists.

After an average follow up of 2.7 years for each patient, 2269 patients had had a primary outcome event—death, a non-fatal myocardial infarction, or a non-fatal stroke. There was no significant difference between the two groups (9.93% in the verapamil group and 10.17% in the atenolol group; relative risk 0.98 (95% confidence interval 0.90 to 1.06)).

The blood pressure goals of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure were achieved by 65% (for systolic pressure) and 88.5% (for diastolic) of the patients receiving the calcium channel blocker and by 64% (systolic) and 88.1% (diastolic) of the patients receiving treatment with atenolol.

A total of 72% of patients taking a calcium channel blocker and 71% of the patients taking a β blocker achieved a systolic blood pressure of <140 mm Hg and diastolic blood pressure of <90 mm Hg.

"The clinical equivalence of the CAS [calcium antagonist strategy] and NCAS [non-calcium antagonist strategy]

Human body inspires festive tree decoration

Seven trees in London's Euston Road are being decorated this week with a light installation that will mimic the peripheral human nervous or arterial system.

Commissioned by the Wellcome Trust and situated outside the trust's headquarters, the artwork, *Arborization*, has been designed by Deborah Aschheim. The picture shows an impression of the decorated trees.

Annabel Ferriman *BMJ*

groups in prevention of death, [heart attack], or stroke supports the use of either strategy in clinically stable patients with CAD [coronary artery disease] who require blood pressure control," said Dr Pepine. "The decision

regarding which drug classes to use in specific CAD patients should be based on additional factors including adverse experiences, history of heart failure, diabetes risk, and the physician's best judgment." □

Doctors told how to manage hypertension in sub-Saharan Africa

Susan Mayor *London*

Guidelines published this week on the management of hypertension and cardiovascular risk factors in sub-Saharan Africa aim to deal with the growing epidemic of cardiovascular disease in the area with the limited resources available.

Hypertension was placed second only to AIDS in the health challenges facing countries in Africa at a meeting of the African Union in 2001. This resulted in the Durban Decision being adopted by African heads of state and governments, which emphasised the need to tackle

hypertension and cardiovascular risk factors in the face of the emerging epidemic of cardiovascular disease in African countries.

Figures from the World Health Organization predict that cardiovascular disease will be the commonest cause of death in developing countries by the year 2020. As a result, the European Commission has provided funding and resources to develop guidelines for the management of cardiovascular risk factors.

The new guidelines, published in the *Journal of*

Hypertension (2003;21:1993-2000), argue that particular consideration has to be given to cost effectiveness and affordability because many countries in sub-Saharan Africa have severe resource constraints.

In some countries, the health budget per person is less than \$10 (£5.80; €8.35) a year. As a result, the panel that developed the guidelines—including clinicians from several African countries—followed the main recommendations made in previous relevant guidelines (including the 2003 statement of management of hypertension by WHO and the International Society of Hypertension) but adapted them to make them more appropriate to the resources available in many sub-Saharan African countries.

The guidelines recommend that low dose thiazide diuretics (for example, hydrochlorothiazide 12.5 mg daily) should generally be used as first line drug treatment for hypertension, with the target blood pressure being <140 mm Hg systolic and <90 mm Hg diastolic in patients with uncomplicated hypertension.

A lower target of <130 mm Hg and <80 mm Hg should be the aim in patients with established cardiovascular disease, diabetes, or chronic renal disease. Other drugs should only be used when there are compelling reasons, such as the use of angiotensin converting enzyme (ACE) inhibitors or angiotensin receptor antagonists in patients who also have diabetes. Generic drugs should be used whenever possible. □